

## Butterfly Valve with Lug types

- Disc 304 stainless steel
- Bubble tight shut-off
- Resilient seat
- Valve face-to-face dimensions comply with API 609 & MSS-SP-67
- Completely assembled and tested, ready for installation



5-year warranty

## Type overview

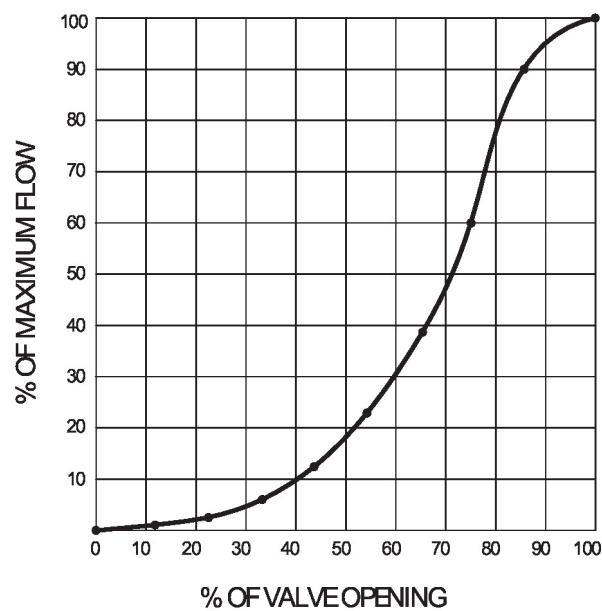
Type	DN
F6125HDU	125

## Technical data

Functional data	Valve size [mm]	5" [125]
Fluid	chilled or hot water, up to 60% glycol	
Fluid Temp Range (water)	-22...250°F [-30...120°C]	
Body Pressure Rating	ANSI Class Consistent with 125, 232 psi CWP	
Close-off pressure Δps	50 psi	
Flow characteristic	modified equal percentage	
Leakage rate	0%	
Pipe connection	Flange for use with ASME/ANSI class 125/150	
Servicing	maintenance-free	
Flow Pattern	2-way	
Controllable flow range	90° rotation	
Cv	1022	
Maximum Velocity	12 FPS	
Lug threads	3/4-10 UNC	
Materials	Valve body	Ductile cast iron ASTM A536
Body finish	epoxy powder coating (blue RAL 5002)	
Stem	416 stainless steel	
Stem seal	EPDM (lubricated)	
Seat	EPDM	
Bearing	RPTFE	
Disc	304 stainless steel	
Suitable actuators	Non Fail-Safe	GRB(X) PRB(X)

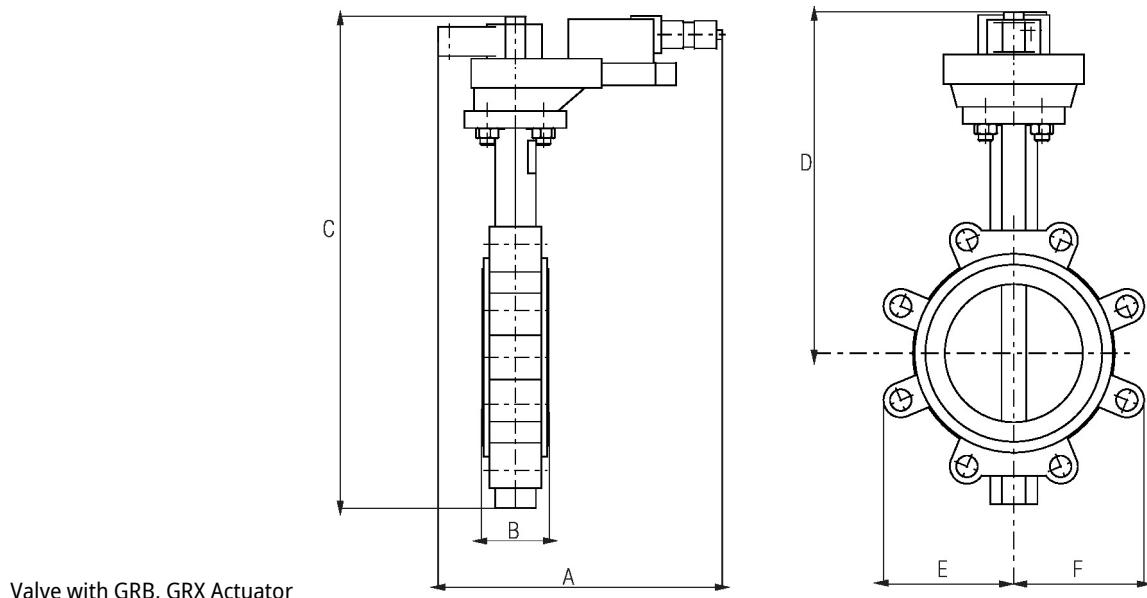
## Product features

## Flow/Mounting details



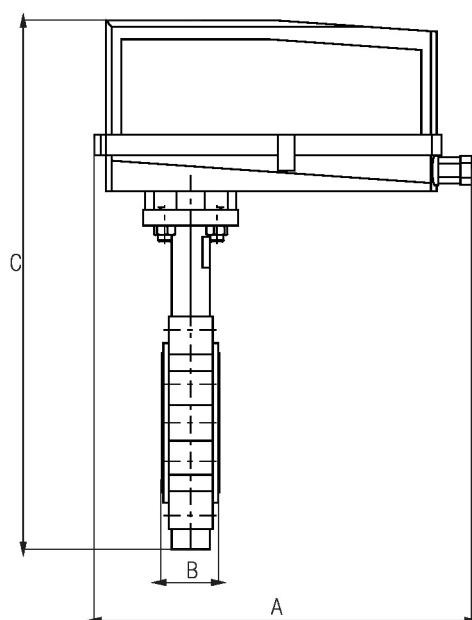
## Dimensions

Type	DN	Weight
F6125HDU	125	16 lb [7.5 kg]

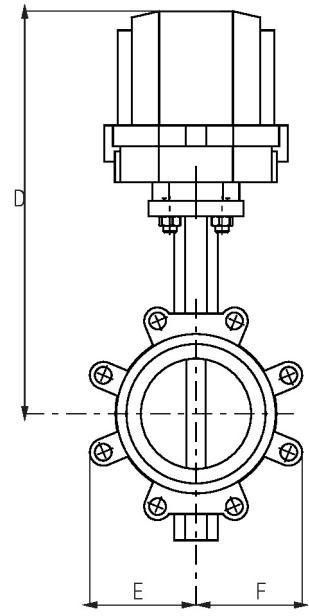


A	B	C	D	E	F	Number of Bolt Holes
10.8" [275]	2.3" [58]	16.7" [425]	12.4" [315]	4.9" [124]	4.9" [125]	8

## Dimensions



Valve with GRB..N4, GRX..N4 Actuator



A	B	C	D	E	F	Number of Bolt Holes
14.4" [366]	2.3" [58]	19.8" [502]	15.4" [391]	4.9" [124]	4.9" [125]	8

## Rotary actuator for butterfly valves

- Nominal voltage AC 24...240 V / DC 24...125 V
- Control On/Off, Floating point
- With two integrated auxiliary switches



5-year warranty



Picture may differ from product

## Technical data

Electrical data	
Nominal voltage	AC 24...240 V / DC 24...125 V
Nominal voltage frequency	50/60 Hz
Nominal voltage range	AC 19.2...264 V / DC 19.2...137.5 V
Power consumption in operation	20 W
Power consumption in rest position	7 W
Transformer sizing	with 24 V 20 VA / with 240 V 55 VA
Auxiliary switch	2x SPDT, 1x 10° / 1x 0...90° (default setting 85°)
Switching capacity auxiliary switch	1 mA...3 A (0.5 A inductive), DC 5 V...AC 250 V
Connection protective earth	20...14 AWG, only copper wires
Electrical Connection	Terminal blocks, (PE) Ground-Screw
Overload Protection	electronic throughout 0...90° rotation
Functional data	
Position accuracy	±5%
Manual override	hand lever
Running Time (Motor)	35 s / 90°
Running time motor variable	20...120 s
Noise level, motor	65 dB(A)
Position indication	Mechanical, integrated
Safety data	
Power source UL	Class 2 Supply
Degree of protection IEC/EN	IP66/67
Degree of protection NEMA/UL	NEMA 4X
Housing	UL Enclosure Type 4X
EMC	CE according to 2014/30/EU
Low voltage directive	CE according to 2014/35/EU
Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
UL Approval	cULus according to UL60730-1A, UL60730-2-14 and CAN/CSA E60730-1 The UL marking on the actuator depends on the production site, the device is UL-compliant in any case
Overvoltage category	III
Rated impulse voltage supply	4 kV
Ambient humidity	Max. 100% RH
Ambient temperature	-22...122°F [-30...50°C]
Storage temperature	-40...176°F [-40...80°C]
Software Class	A
Servicing	maintenance-free
Weight	
Weight	8.1 lb [3.7 kg]

## Technical data

## Safety notes



- This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Caution: Line voltage!
- The device has a protective earthing. Incorrect connection of the protective earth can lead to hazards due to electrical shock.
- Only authorized specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- Apart from the wiring compartment, the device may be opened only at the manufacturer's site. It does not contain any parts that can be replaced or repaired by the user.
- The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- The two switches integrated in the actuator are to be operated either on line voltage or on safety extra-low voltage. The combination line voltage/safety extra-low voltage is not permitted.
- For maintenance work, the correct valve position must be set via the control signal. Additionally, the actuator must be disconnected from the power source. The hand crank and manual override shall not be used as a safety measure to maintain the valve position.

## Product features

<b>Fields of application</b>	The actuator is particularly suitable for utilisation in outdoor applications and is protected against the following weather conditions: - UV radiation - Dirt / Dust - Rain / Snow - Air humidity
<b>Internal heating</b>	An internal heater prevents condensation buildup. Thanks to the integrated temperature and humidity sensor, the built-in heater automatically switches on/off.
<b>Configurable Device</b>	The factory settings cover the most common applications. Belimo Assistant 2 is required for configuration via Near Field Communication (NFC) and simplifies commissioning. Moreover, Belimo Assistant 2 provides a variety of diagnostic options. The ZTH EU service tool provides a selection of both diagnostic and setting options.
<b>Simple direct mounting</b>	Simple direct mounting on the butterfly valve. The mounting orientation in relation to the butterfly valve can be selected in 90° (angle) increments.
<b>Manual override</b>	The valve can be manually operated using a hand crank. Unlocking is carried out manually by removing the hand crank.
<b>High functional reliability</b>	The actuator is overload protected, requires no limit switches and automatically stops when the end stop is reached.
<b>Innovative motorization</b>	The actuator uses the powerful Belimo M600 microchip in combination with the INFORM method. It provides the full starting torque from a standstill with high precision (sensorless INFORM-Drive by Prof. Schrödl).
<b>Flexible signaling</b>	The actuator has one auxiliary switch with a fixed setting (10°) and one adjustable auxiliary switch (0...90°).

## Accessories

Tools	Description	Type
	Service tool for wired and wireless setup, on-site operation and troubleshooting.	Belimo Assistant 2

## Accessories

Description	Type
Universal converter, with ZIP-USB function and Bluetooth to NFC conversion, for wired and wireless connection of the device to PC/tablet/smartphone	Belimo One Tool
Connecting cable 16 ft [5 m], A: RJ11 6/4 LINK.10, B: 6-pin for connection to service socket	ZK1-GEN
Mechanical accessories	Description
Hand crank for JR actuator	ZJR20

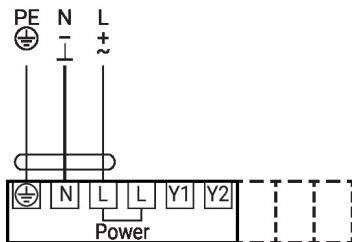
## Electrical installation



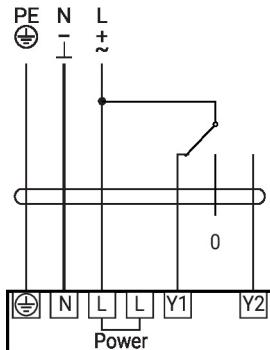
Caution: Line voltage!

Parallel connection of other actuators possible. Observe the performance data.

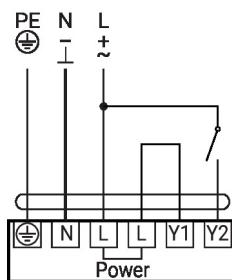
AC 24...240 V / DC 24...125 V



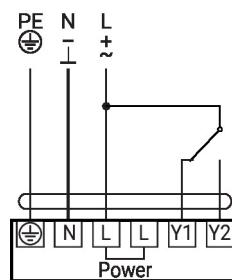
Control floating point



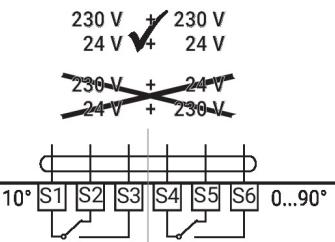
Control on/off



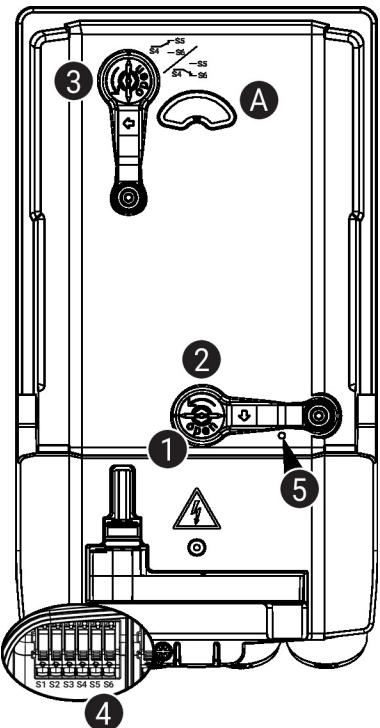
Control on/off



Auxiliary switch



## Operating controls and indicators



## ⑤ LED display green

Off: No power supply or malfunction

On: In operation

## Auxiliary switch settings

**Note:** Perform settings on the actuator only in deenergised state.

For the auxiliary switch position settings, carry out points ① to ④ successively.

## ① Gear train disengagement

Opening the manual override cover and adjusting the hand crank.  
Manual override is possible.

## ② Manual override

Turn the hand crank until the desired switching position **A** is indicated and then remove the hand crank.

## ③ Auxiliary switch

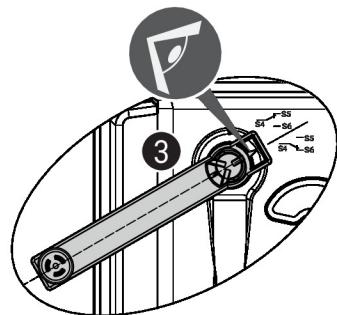
For the auxiliary switch position settings, carry out points ① to ④ successively.

Opening the auxiliary switch adjustment cover and adjusting the hand crank.  
Turn the hand crank until the arrow points to the line.

## ④ Terminals

Connect continuity tester to S4 + S5 or to S4 + S6.

If the auxiliary switch should switch in the opposite direction, rotate the hand crank by 180°.



## Service

## Wireless connection

Belimo devices marked with the NFC logo can be operated with the Belimo Assistant 2.

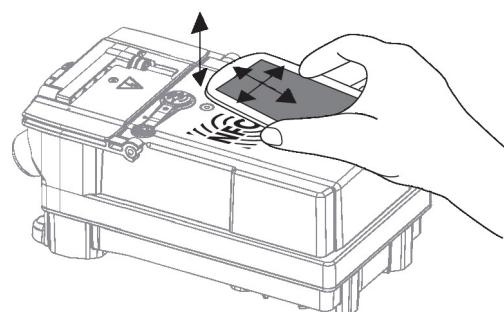
Requirement:

- NFC- or Bluetooth-capable smartphone

- Belimo Assistant 2 (Google Play and Apple AppStore)

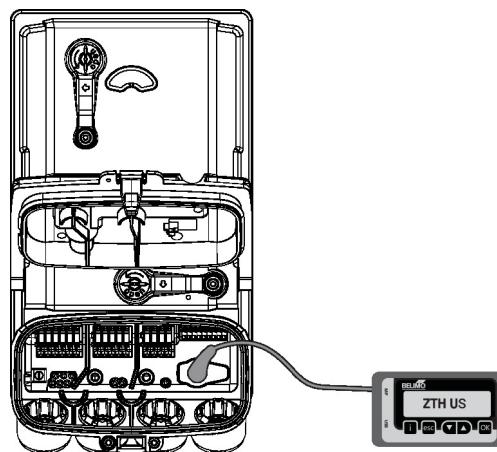
Align NFC-capable smartphone on the device so that both NFC antennas are superposed.

Connect Bluetooth-enabled smartphone via the Bluetooth-to-NFC converter ZIP-BT-NFC to the device. Technical data and operating instructions are shown in the ZIP-BT-NFC data sheet.

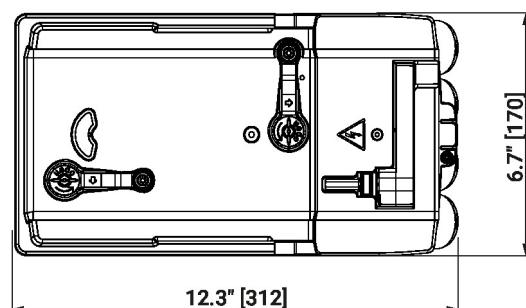
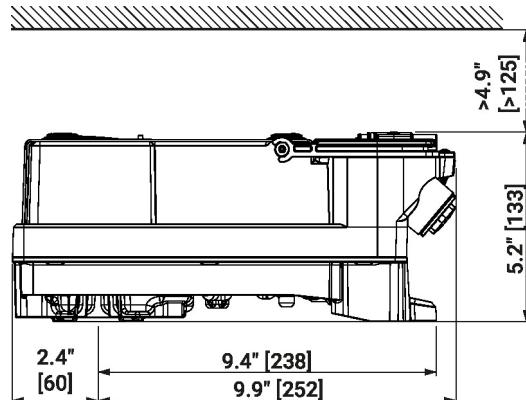


## Service

**Wired connection** The Belimo One Tool can configure the actuator via the service socket.



## Dimensions



## Further documentation

- The complete product range for water applications
- Data sheets for butterfly valves
- Installation instructions for actuators and/or butterfly valves
- General notes for project planning
- Quick Guide – Belimo Assistant 2